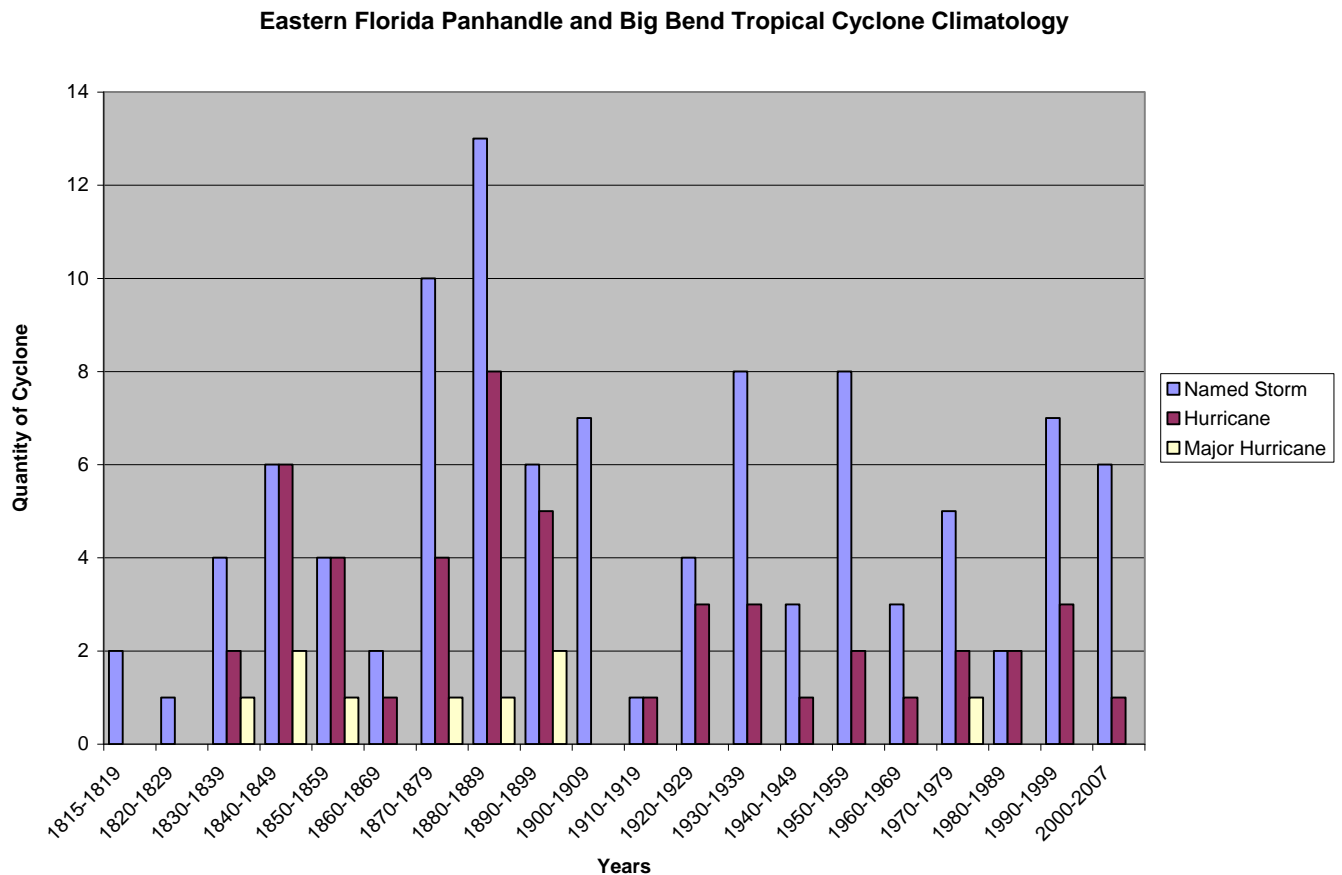


2. Historical Tropical Cyclone Data of the Florida Big Bend and Panhandle

2.1 Summary

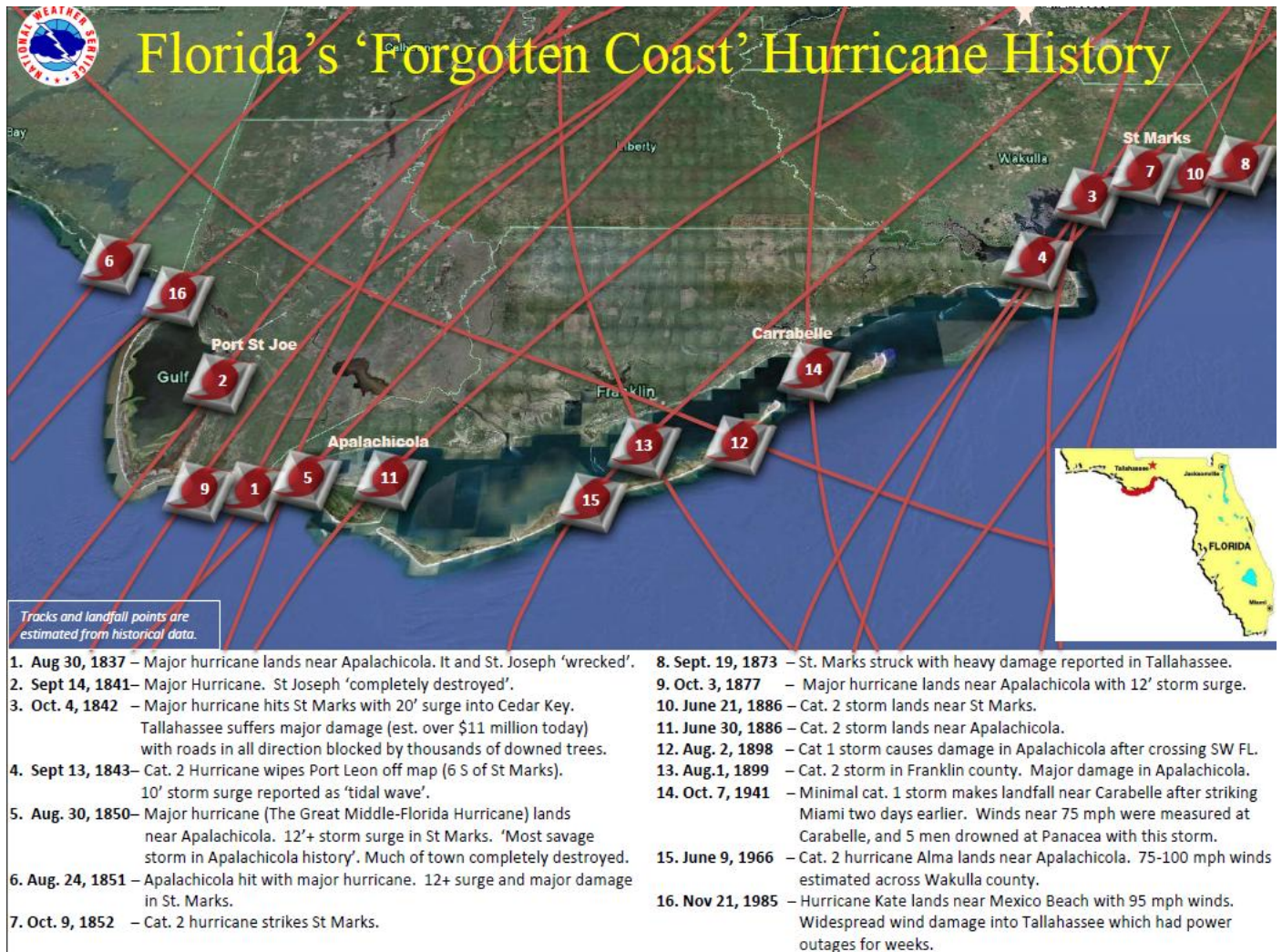
Reliable hurricane history for the region begins around 1815, though some storms through the 1820s may have been missed due to the region being sparsely populated until after Tallahassee became the territorial capital of the US Territory of Florida.

Over the period of 1815 to 2007, 102 systems of tropical storm intensity or higher have made landfall or moved near the region between Destin and the mouth of the Suwannee River. Several active periods are noted as indicated in the graph below.



During the most active period of 1870 to 1899, 29 tropical systems impacted the region, of which 17 were hurricanes. During this 30 year period, 45 percent of the region's major hurricane landfalls occurred. A relative quiet period ensued from 1900 through 1960 with only 34 tropical systems making landfall, of which only 11 were hurricanes. Our last major hurricane was Hurricane Eloise in 1975. Since 1980, 15 named storms have made landfall along our coastline. The reason for the noticeable decrease in landfalling tropical cyclones in the 20th century is unclear. However, we do know that climatology favors a tropical cyclone that is recurving into the westerlies as it approaches our forecast area. Tropical cyclones of this type are typically weakening around landfall. Historically, our coastline features one of the lowest probabilities of landfalls from a tropical system in the southeast.

The recent decrease in landfalling tropical cyclones throughout the 20th century has led to a very dangerous misconception in North Florida that this region is immune to hurricanes. The statistics shown on the previous page and this map below show that belief to be completely false



Many of the storms referenced throughout this map occurred prior to 1900. Each one of these storms throughout the 19th century had a profound effect on the development of North Florida. Some of the initial coastal communities in North Florida did not survive these hurricanes and were either abandoned or moved further inland. Thus, given our history, we strongly feel that it is not a question of if another hurricane will impact this region but when it will occur. With more people living in North Florida today than ever before, the impacts from even a category one hurricane could be significant.

2.2 Specific Tropical Cyclones of Note:

August 7, 1837. A hurricane makes landfall along the northern Gulf Coast, likely somewhere west of Panama City. This storm produced a storm surge in excess of 6 feet at St. Marks. The effects of this storm at Saint Marks were likely similar to Hurricane Dennis of 2005.

August 30, 1837. A compact major hurricane makes landfall near Apalachicola. According to Florida's Hurricane History by Jay Barnes, "Damage from this hurricane was severe, as ships were wrecked and homes and wharves were washed away. In St. Joseph (near modern day Port St. Joe) a three story building was 'razed to the ground.' The damages in Apalachicola were first estimated to be \$200,000, but that figure was later reduced. The editor of the Apalachicola Gazette summarizes the scene: 'I write from the midst of ruins.'"

September 1841. St. Joseph was completely destroyed by a hurricane. Little is known about this storm other than little was left of the town after the storm.

October 4, 1842. A major hurricane makes landfall near Saint Marks and produces a 20 foot storm surge at Cedar Key. Tallahassee suffers significant wind damage valued at 11.1 million in 2008 dollars. At Apalachicola, the East Pass lighthouse was heavily damaged when it lost 30 feet of its height. According to Florida's Hurricane History, "roads in all directions from the Florida capital were blocked with thousands of fallen trees."

September 13, 1843. Port Leon is wiped off the map by a category two hurricane. A 10 foot storm surge is produced referred to as a "tidal wave". The hurricane kills 14 in the Florida Panhandle. In the Florida Historical Quarterly, historian T. Frederick Davis wrote:

Every warehouse in the town was laid flat with the ground....Nearly every dwelling was thrown from its foundation and many of them crushed to atoms. The merchants took what precautions they could for protection against high wind and water before the height of the storm, by moving their goods, as they thought, out of danger. But the surging water and furious blasts were irresistible, and the goods in the stores were either destroyed or badly damaged....Every dwelling house and store that was not demolished was left in a wretchedly shattered and filthy condition.

August 30, 1850. A powerful hurricane hits Apalachicola bringing a significant storm tide. Several downtown streets were flooded.

August 24, 1851. The Great Middle-Florida Hurricane. A major hurricane hits Apalachicola producing a 12 foot storm surge in Saint Marks. This storm was recorded as the "most savage and destructive storm in the history of Apalachicola." The Commercial Advertiser, the newspaper in Apalachicola reported that this was, "the most destructive storm it has ever witnessed." All three lighthouses were blown down or washed away. Florida's Hurricane History puts it this way:

"The wind apparently blew for more than twenty hours, leveling houses of all sizes. Extremely high tides washed away warehouses and stores and all of their contents, leaving the inhabitants without shelter and almost without food. All of the buildings on Water Street were destroyed, and every house on Front or Commerce Street is in ruins."

In Tallahassee, the Tallahassee Sentinel reported that "tall forest oaks were uprooted or rudely snapped asunder; China trees stood no chance, fences were prostrated, tin roofing peeled up like paper, roofs torn up, brick bats flying; and altogether such a general scatteration taking place as is not often seen."

At Saint Marks, the storm tide was greater than all previous storms with portions of the fortifications swept away. The tide was estimated in excess of 12 feet. Residents were forced from their homes in the midst of the storm and forced to swim or float on debris.

October 3, 1877. A major hurricane makes landfall at Apalachicola creating a storm surge of 12 feet.

June 21, 1886. A category 2 hurricane makes landfall in Saint Marks.

June 30, 1886. A category 2 hurricane makes landfall east of Apalachicola.

August 1, 1899. A category 2 hurricane makes landfall west of Apalachicola causing significant damage in Carrabelle. According to a New York Times Article published on August 4th:

"At Carrabelle only nine houses remain of a once beautiful and prosperous town. Communications from the mayor state that 200 families are without homes or shelter and many are completely destitute. The Carrabelle, Tallahassee, and Georgia Railroad is washed away for a distance of thirty miles. A passenger train was blown from the track more than 100 yards."

June 9, 1966. Hurricane Alma makes landfall near Apalachicola as a category two hurricane. Alma caused 66 million dollars (2008 USD) in damage. Winds of 75 to 100 mph were estimated in coastal Wakulla County.

September 23, 1975. Major Hurricane Eloise makes landfall near Destin with winds of 125 mph. This storm created a 16 foot storm surge across the Panhandle Coast. Damage exceeded 400 million in 2008 USD.

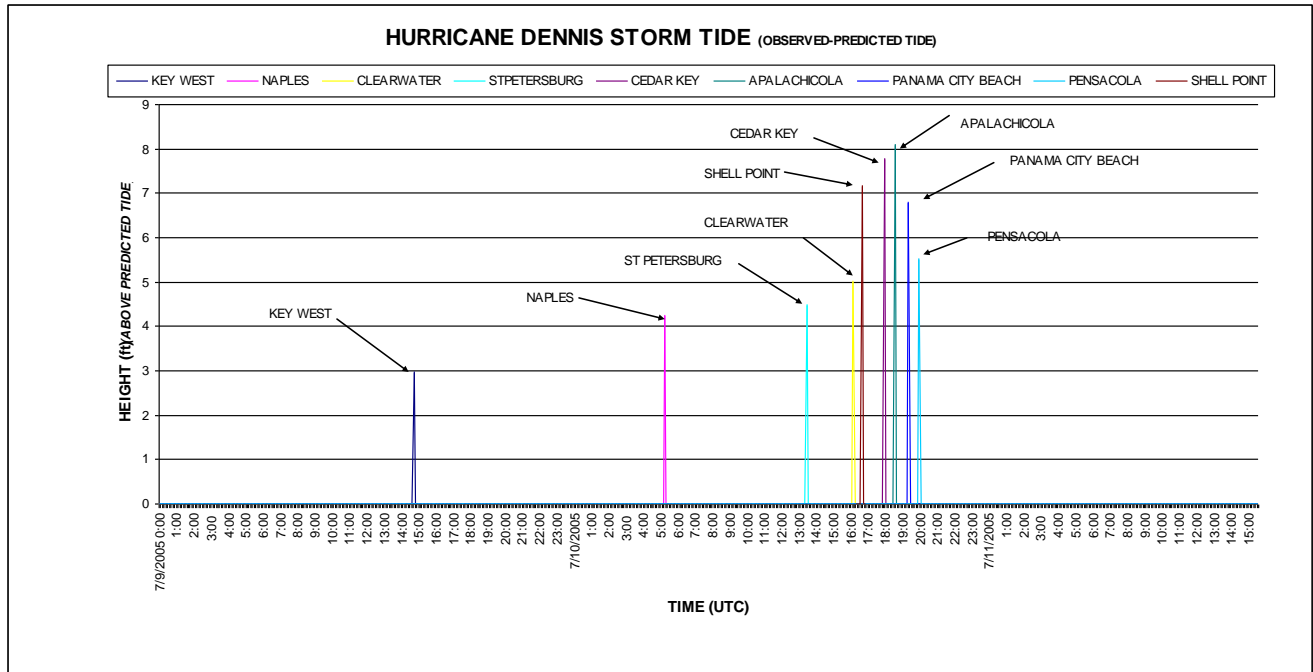
November 21, 1985. Hurricane Kate makes landfall east of Panama City, near Mexico Beach with winds of 95 mph. Significant wind damage occurred around the western Florida Big Bend, particularly in and around Tallahassee. Observations from the Tallahassee Regional Airport show that winds never exceeded 70 mph.

2004 Hurricane Season.

Even if a tropical cyclone does not directly make landfall in our forecast area, impacts can still be felt. This was very much the case in the active 2004 season. Bonnie, Frances, Ivan, and Jeanne all had an impact on our forecast area. The most severe was Ivan which produced numerous tornadoes across the Florida Panhandle and Big Bend and storm surge heights of 8 to 10 feet along the Florida Panhandle Coast.

July 10, 2005. Hurricane Dennis made landfall in the Pensacola area, over 200 miles from the Florida Big Bend, and still caused moderate to significant damage along the Florida Big Bend coast. While wind speeds remained below hurricane force in the Florida Big Bend, the main impact was storm surge. Between 8 to 10 feet of storm surge was observed in Apalachee Bay

well east of where Dennis made landfall. From Apalachicola to Keaton Beach, coastal communities were inundated with storm surge. US Highway 98 was washed out in several places in Franklin County. This unusually high storm surge from a storm making landfall a couple hundred miles to the west was caused by the combination of tropical storm force winds pushing water into Apalachee Bay and a trapped continental shelf wave moving northward along the Florida west coast.



August 22, 2008. Tropical Storm Fay progressed across the Florida Big Bend and Panhandle over three days in late August. While winds from Fay were generally in the 40 to 50 mph range, significant widespread heavy rain created near record flooding across much of the Florida Big Bend, including Tallahassee. A storm total rainfall report of 27.50 inches was received from Thomasville, Georgia during Fay. 22 inches of this rain fell in a 24 hour period. This set a record for the highest 24 hour rainfall total in Georgia.



